

REMARKS

Claims 1-19 are pending in the present application. Claims 8, 15, 16 and 19 have been amended herewith. Reconsideration of the claims is respectfully requested.

Amendments were made to the specification to correct errors and to clarify the specification. No new matter has been added by any of the amendments to the specification.

Also, Applicants have submitted replacement sheets for Figures 1, 2 and 3.

I. Drawings

The Examiner objected to the drawings due to various discrepancies between the reference numerals and text in the drawings and the reference numerals and text in the specification.

First, the Examiner notes that Figure 1 includes reference numbers 114, 116 and 118 not mentioned in the description. Applicants have amended the description at page 5 to include mention of these reference numbers.

Next, the Examiner notes that the text associated with reference number 100 of Figure 1, 200 of Figure 2 and 300 of Figure 3 does not exactly match the textual description used in the specification when discussing these reference numbers. Applicants are submitting replacement sheets for Figures 1, 2 and 3 which delete the text associated with reference numbers 100 (Figure 1), 200 (Figure 2), and 300 (Figure 3).

Thus, the objection to the drawings has been overcome.

II. Specification

The Examiner objected to the Specification due to various informalities with respect to reference numerals 108-112. Applicants have amended the Specification herewith to recite reference numbers 108, 110 and 112 in lieu of 108-112.

Therefore, the objection of the Specification has been overcome.

III. 35 U.S.C. § 102, Anticipation

The Examiner rejected Claims 7-8, 15-16 and 18-19 under 35 U.S.C. § 102(b) as being anticipated by “Technology Overview of Mojo Nation”, MOJO Nation, ‘Online’, XP002177454, hereinafter XP. This rejection is respectfully traversed.

Generally speaking, the present invention is directed to an improved technique for distributing information in a computer network. An electronic file is divided into a plurality of pieces. The first client machine to request a given file piece receives such file piece from the server. If another client such as a second client later requests this same file piece, the request for such file piece is redirected to the first client such that the first client acts as a peer-to-peer server and provides the requested file piece to the other client, thus off-loading work from the primary/initial server. While the cited XP reference describes a peer-to-peer network environment with similar objectives of off-loading work from a primary server, the techniques used to achieve such server-work off-loading are substantially different. Per the teachings of XP, a swarm distribution technique is provided where a plurality of middlemen brokers are located between a requesting client and the network to manage a bartering system where clients who contribute the most resources to the peer-to-peer environment receive a higher priority for requested resources. These general distinctions will now be further described with respect to the specific claimed features of the present invention.

With respect to Claim 7, such claim is directed to a method for distributing information in a computer network wherein a requested file piece is received from a server, and *a request for this same file piece is received from a client machine as redirected by a server* such that the file piece can be sent to the client machine by a peer-to-peer server in lieu of the master server. Specifically, Claim 7 recites two receiving steps: (1) receiving the requested file piece from the server, and (2) receiving a request for said file piece from a client machine, wherein the request is redirected from the server. The file piece is then sent to the client machine. Thus, as can be seen, a subsequent request for the same file piece is redirected from the server, and this file piece is then sent to the requesting client machine, thereby advantageously eliminating any need for the server (where the electronic file was stored) to fulfill such request.

In rejecting Claim 7, the Examiner cites XP page 1, paragraph 7, page 2, paragraph 7 and page 3 paragraphs 1-2 as teaching these claimed steps. Applicants show that the cited passage at page 1, paragraph 7 generally discusses a client-server distributed system where a client sends a request to a server, and the server responds. This passage makes mention of agents who perform both client and server roles. The details of requesting, receiving and sending of requests and content - including the specifically reciting details of requesting, receiving, and sending of requests and content as explicitly recited in Claim 7 - are not described in the XP page 1 citation.

The cited passage at XP page 2, paragraph 7 discusses breaking a distributed file into fragments for storage and retrieval such that many agents may work in parallel on each data transfer, where each agent contributes effort to each task *based upon available bandwidth*. This general comment of many agents working in parallel, where each agent contributes effort to the task based upon available bandwidth, does not teach the specific details of requesting, receiving, and sending of requests and content as expressly recited in Claim 7.

The cited passage at page 3, paragraphs 1-2 describes how information is published through a broker, where information is broken into pieces and stored on various block servers based upon prices of storage and range of block IDs. These blocks are 'then shared between peers'. This general statement of block sharing among peers does not teach the specific details of requesting, receiving, and sending of requests and content as expressly recited in Claim 7.

Importantly, none of these cited passages teach that a subsequent request for a file piece is redirected by the server for which the electronic file is stored. Claim 7 expressly recites "receiving a request for said file piece from a client machine" ('said file piece' being defined in the claim to be a file piece requested of and received from the server), wherein the request is redirected from the server. In fact, the cited reference does not teach that servers, which have requested files stored thereon, provide any type of request redirection. Instead, the cited reference teaches use of middleman brokers to facilitate data retrieval based upon Mojo currency (XP page 2, paragraph 1; page 2, paragraph 6, page 3, paragraphs 5 and 6).

In summary, the passages cited by the Examiner do not teach two requests for the same file piece (“requesting one of a plurality of pieces of an electronic file”, “receiving the requested file piece”, and “receiving a request for said file piece from a client machine”), where one of these requests is redirected from the server (where the electronic file is stored thereon). Thus, as every element of the claimed invention is not identically shown in a single reference, it is shown that Claim 7 is not anticipated by the cited reference.

Applicants traverse the rejection of Claims 15 and 18 for similar reasons to those given above with respect to Claim 7

With respect to Claims 8 and 19, Applicants have amended such claims to recite that the copy of the file piece on the client machine – which is subsequently received – is the result of a previous request from the client machine to the server. For similar reasons to those described above with respect to Claim 7, the cited reference does not teach such client machine that initially requests the file piece from the server, *and then itself* fulfills a subsequent request for this same file piece. Thus, amended Claims 8 and 19 are not anticipated by the cited reference as every claimed element is not identically shown in a single reference.

With respect to Claim 16, the cited reference does not teach a single unitary computer program product that comprises the two recited “instructions for” elements of requesting and receiving. In rejecting Claim 16, the Examiner notes that this unitary computer program product is taught at XP Page 1, paragraph 7, Page 2, paragraph 7 and Page 3, paragraph 2. The cited passage on page 1 generally describes the operation of a client-server distributed system, and makes no mention of a unitary computer program product (and thus makes no mention of a unitary computer program product that comprises the two expressly recited “instructions for” features). The cited passage on page 2 describes the operation of many agents working in parallel, and makes no mention of a unitary computer program product (and thus makes no mention of a unitary computer program product that comprises the two expressly recited “instructions for” features). The cited passage on page 3 generally describes how block servers are chosen for storing data blocks thereon, and makes no mention of a unitary computer program product (and thus makes no mention of a unitary computer program product that comprises the two

expressly recited “instructions for” features). Thus, as every element of the claimed invention is not identically shown in a single reference – and in particular there is no teaching of a unitary computer program product comprising instructions for requesting one of a plurality of pieces of an electronic file, wherein the electronic file is stored in a server; and instructions for receiving the requested file piece from a client machine containing a copy of said file piece – it is shown that Claim 16 is not anticipated by the cited reference.

Therefore, the rejection of Claims 7-8, 15-16 and 18-19 under 35 U.S.C. § 102 has been overcome.

IV. 35 U.S.C. § 103, Obviousness

A. The Examiner rejected Claims 1-3, 5-6, 9-11, 13-14 and 17 under 35 U.S.C. § 103 as being unpatentable over “Technology Overview of Mojo Nation”, MOJO Nation, ‘Online’, XP002177454 (hereinafter XP), in view of Hartsell et al. (US 2002/0174227). This rejection is respectfully traversed.

With respect to Claim 1, Applicants urge that none of the cited references teach or suggest the claimed step of “receiving a request for a file piece from a first client machine”, *the file piece being a divided portion of an electronic file*. In rejecting Claim 1, the Examiner cites XP page 1, paragraph 7 as teaching this claimed step. Applicants urge that this paragraph merely describes a client that sends a request to a server, and the server responds. There is no indication that this ‘request’ is for a file piece (the file piece being a divided portion of an electronic file), as expressly recited in Claim 1. To establish prima facie obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. MPEP 2143.03. *See also, In re Royka*, 490 F.2d 580 (C.C.P.A. 1974). Since all of the claim limitations are not taught or suggested by the cited references, the Examiner has failed to establish a prima facie showing of obviousness with respect to Claim 1.

Still further with respect to Claim 1, none of the cited references teach or suggest *receiving two distinct requests for the same file piece*, nor do they teach or suggest different corresponding actions associated with each individual request. Claim 1 recites receiving a request for a file piece from a first client machine and downloading the

requested file piece to the first client machine. Claim 1 goes on to recite receiving a request for said file piece from a second client machine (i.e. another request for the same file piece) and redirecting the request to the first client machine (the first client machine being the one which also requested the file piece). None of the cited references teach/suggest such request/redirect co-action with respect to a first client machine. The passage cited as teaching the claimed redirection of the request (Hartsell Page 37, paragraph [0303]) does *not* teach or suggest that *the request for a file piece is redirected to a machine which had itself requested the file piece*. Rather, it merely states that ‘Alternatively, requests may be redirected to alternative systems or nodes’. There is no teaching or suggestion that such alternative systems or nodes were themselves involved in a request for the same file piece. This can further be seen in that this cited Hartsell passage is with respect to connection requests, and not data/content requests as recited in Claim 1. There is no indication or other teaching/suggestion that this ‘alternative system or node’ previously requested this same connection, so even assuming arguendo that a connection request is the same as or equivalent to a data/content request, the cited reference still does not teach or suggest that this alternative system or node itself requested the same connection. Claim 1 expressly recites that the request is redirected to the client machine *which itself* has requested the same content/data (the “file piece”). Thus, it is further shown that a prima facie case of obviousness has not been established with respect to Claim 1.

Applicants initially traverse the rejection of dependent Claims 2, 3, 5 and 6 for reasons given above with respect to Claim 1 (of which Claims 2, 3, 5 and 6 depend upon).

Further with respect to Claim 5, Applicants urge that none of the cited references teach or suggest the claimed feature of “sending a digest for a file piece *to each client machine which has received that file piece*’ (emphasis added by Applicants). In rejecting Claim 5, the Examiner cites XP Page 4, paragraph 5 as teaching this claimed feature. Applicants urge that while this passage may generally discuss an encryption and authentication layer, this passage merely describes encrypting and decrypting a text message using public-key cryptography, and ensuring authenticity of this text message by validating the sender’s private key. The specific details as recited in Claim 5, specifically

sending a digest for a file piece, are not taught/suggested by this cited passage. In addition, it should be noted that this XP cited passage describes encryption and authentication *between two parties*. Claim 5 expressly recites sending a digest to each client machine which has received the file piece. The cited passage does not teach or otherwise suggest this type of digest sending to each client which has received the file piece, but rather is merely directed to a two-party text message exchange. Thus, it is further shown that a prima facie case of obviousness has not been established by the Examiner with respect to Claim 5.

Further with respect to Claim 6, Applicants urge that none of the cited references teach or suggest the claimed feature of “receiving a message from a client, wherein the message indicates that a peer-to-peer server has corrupted a file piece”. As can be seen, this claimed step is with respect to a *corrupted file piece*, where a received message indicates such file piece corruption. In rejecting this claimed step, the Examiner cites XP Page 2, paragraph 2 and Page 4, paragraphs 5-6 as teaching this claimed step. The cited XP passage on page 2 describes a bartering system where digital tokens are used for peer-to-peer micropayment. This passage has nothing to do with corrupted file pieces, or messages pertaining to such corrupted file pieces, as expressly recited in Claim 6. The cited XP passage on page 4 does not overcome this teaching/suggestion deficiency. There, XP discusses at Page 4, paragraph 5 an encryption and authentication layer for message exchange between two parties, and has nothing to do with corrupted file pieces, or messages pertaining to such corrupted file pieces, as expressly recited in Claim 6. The XP cited passage at Page 4, paragraph 6 describes a conversation layer that matches initiating messages with responding messages. There is no teaching/suggestion that these messages indicate any type of *file piece corruption*, as expressly recited in Claim 6. Thus, it is further shown that the Examiner has failed to properly establish a prima facie showing of obviousness with respect to Claim 6, as all claimed elements are not taught or suggested by the cited references.

Still further with respect to Claim 6, none of the cited references teach or suggest the claimed step of “disconnecting the peer-to-peer server *responsible for corrupting said file piece*” (emphasis added by Applicants). In rejecting this step of Claim 6, the Examiner acknowledges that the cited XP reference does not teach this step, but alleges

that the cited Hartsell reference teaches this step at Page 37, paragraph [0303]. Applicants have reviewed this passage thoroughly, and can find no mention of disconnecting a peer-to-peer server (rather, it describes acceptance or rejection of a connection request), nor the particular step of disconnecting the peer-to-peer server *responsible for corrupting the file piece*. Thus, it is shown that Claim 6 has additional claimed features not taught or suggested by the cited references, and thus has been erroneously rejected.

Applicants traverse the rejection of Claim 9 (and dependent Claims 10, 11, 13 and 14) for similar reasons to those given above with respect to Claim 1.

Applicants further traverse the rejection of Claim 13 for similar reasons to the further reasons given above with respect to Claim 5.

Applicants further traverse the rejection of Claim 14 for similar reasons to the further reasons given above with respect to Claim 6.

Applicants traverse the rejection of Claim 17 for similar reasons to those given above with respect to Claim 1.

Therefore, the rejection of Claims 1-3, 5-6, 9-11, 13-14 and 17 under 35 U.S.C. § 103 has been overcome.

B. The Examiner rejected Claims 4 and 12 under 35 U.S.C. § 103 as being unpatentable over XP in view of Hartsell, as applied to Claims 1-3 and 9-11 above, and further in view of “Inverse: Designing an Interactive Universe Architecture for Scalability and Extensibility”, Singhal et al. XP010245516. This rejection is respectfully traversed.

Applicants initially traverse the rejection of Claims 4 and 12 for reasons given above with respect to Claims 1 and 9, of which Claims 4 and 12 respectively depend upon.

Further with respect to Claims 4 (and similarly for Claim 12), Applicants urge that none of the cited references teach or suggest the claimed step of “redirecting said request to a second peer-to-peer server containing a copy of said file piece” (emphasis added by Applicants). In rejecting this claimed step, the Examiner states that Hartsell teaches such redirection at Page 37, paragraph [0303]. Applicants show two-fold error in

such assertion. First, the request being redirected by Hartsell is a connection request, whereas Claim 4 expressly recites that the request is with respect to a file piece. Perhaps more importantly, the cited passage merely states that the connection request is “redirected to alternative systems or nodes”. There is no teaching/suggestion that these alternative systems or nodes contain a copy of a requested file piece. Rather, these are merely stated to be ‘alternative’ systems or nodes with no further qualification. Thus, Claim 4 (and similarly for Claim 12) is further shown to not be obvious in view of the cited references as there is at least one additional claimed feature not taught or suggested by the cited references.

Still further with respect to Claim 4 (and similarly for Claim 12), Applicants show that none of the cited references teach or suggest the claimed step of “receiving a request for a file piece stored in a first peer-to-peer server *which is no longer connected to the computer network*” (emphasis added by Applicants). In rejecting Claim 4, the Examiner states this receiving step is taught by the cited Singhal reference at Page 66, Column 2, paragraph 2-3. Applicants urge that this passage teaches the sending and receipt of heartbeat signals (called keepalive requests) to determine if a particular client is responsive to such heartbeat signal, and if not, the client is unregistered. This is different from what is recited in the receiving step of Claim 4 for at least two reasons. First, these keepalive requests as taught by Singhal are not ‘a request for a file piece stored in a peer-to-peer server’, but rather are keepalive or heartbeat requests. Second, there is no teaching that this peer-to-peer server, for which a request for a file piece stored thereon is received, is no longer connected to the computer network. The cited passage merely states that a non-responsive client is unregistered. There is no teaching or other suggestion of processing of requests for files stored on such unregistered clients. Claim 4 expressly recites *receiving a request for a file piece stored in a first peer-to-peer server which is no longer connected to the computer network*. Thus, Claim 4 (and similarly for Claim 12) is still further shown to not be obvious as there are further claimed features not taught or suggested by the cited references.

Therefore, the rejection of Claims 4 and 12 under 35 U.S.C. § 103 has been overcome.

V. **Conclusion**

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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